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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,653	04/07/2005	Kyu-Jin Yum	4971-0107PUS1	6917

2292 7590 10/19/2006

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EXAMINER
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WARE, DEBORAH K

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/530,653

Applicant(s)

YUM ET AL.

Examiner

Deborah K. Ware

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/28/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-5 are presented for reconsideration on the merits.

#### ***Foreign Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on April 7, 2005, was received and entered. The submission is in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Response to Amendment***

The amendment response filed July 28, 2006, has been received and entered. An extension of time filed therewith has been received and check fees received also.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over KR 2002084756A (KR) in view of Romaine et al (US 4,803,800), Kristensen et al (US 5807583) and Hince (US2002/0090697A1), all cited on enclosed PTO-892 Form.

Claims are drawn to a microbial material mixture comprising *Trichosporon loubieri* KCTC 18079P, lipophilic powder being at least wax (i.e. beeswax) and soybean and saccharide, wherein the mixture is comprised of varying amounts of these ingredients. Further, a method is claimed for degrading toxic chemicals.

KR teaches a microbial material mixture comprising *Trichosporon loubieri* KCTC 18079P and carrier, and nutrient source (i.e. carbon). See the abstract.

Romaine et al teach a synthetic mixture for fungi wherein the nutrients include soybean and saccharide, note column 9, lines 35 and 39. Further, waxes are disclosed to be present in the microbial material mixture which is comprised in the form of a matrix. See column 9, lines 30-45 and abstract.

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Kristensen et al teach sustained release material which comprises a lipophilic powder or binder made from beeswax, note column 6, line 34 and line 61.

Hince teaches slow release compositions for bioremediation, comprising powdered binders and microbial material, note page 13, column 2, lines 1 and 9.

The claims differ from KR in that lipophilic powder comprising wax, soybean and saccharide are not disclosed.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to provide for KR microbial material mixture a lipophilic powder comprising wax, and soybean and saccharide as microbial nutrients as disclosed by Romaine et al and Kristensen et al and Hince for use in a method for degrading toxic chemicals.

Hince clearly teaches that powdered binders are sufficient to control the release of the microbial material mixture in a process for bioremediation. Kristensen et al clearly teach lipophilic binders are good for controlling release of a material. Romaine et al clearly teach that waxes and saccharide and soybean are microbial nutrients for fungi. The KR reference clearly teaches a fungi in a microbial material mixture.

To combine each of these ingredients in optimal amounts is clearly within the skill of an ordinary artisan and one of skill would have expected successful results. Each of these ingredients are known in the cited prior art and to use them in combination for degrading toxic chemicals is clearly suggested by the cited prior art combination. The motivation to select for a lipophilic powder comprised of wax is clearly suggested in the

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cited prior art as well. In the absence of persuasive evidence to the contrary the claims are prima facie obvious over the cited prior art.

### ***Response to Arguments***

Applicant's arguments filed July 28, 2006, have been fully considered but they are not persuasive. The argument that the applied prior art above does not provide disclosure for which those of skill in the art would have been motivated to provide the claimed microbial material is noted, however, the art clearly teaches a microbial material mixture comprising *Trichosporon loubieri* KCTC 18079P and carrier, and nutrient source (i.e. carbon). See the abstract of the primary cited disclosure, KR. Furthermore, the KR reference teaches that the microbial material can be provided for in a method for degrading toxic chemicals.

The argument that the KR discloses the microorganism itself and not a mixture is noted, however, the microorganism of KR is provided for as a culture filtrate, wherein KR discloses obtaining a supernatant and then mixing the supernatant with a diluted solution containing a nutrient and culturing the microorganism. The microorganism and culture filtrate capable of degrading toxic chemicals using a carrier is clearly disclosed, or at least suggested, by the KR reference. The only feature missing from the KR reference is the teaching of a lipophilic powder as a carrier source. The use of a carrier is disclosed, however, by the KR reference. The argument that the role of the carrier is only for fixing the microorganism is not persuasive since the KR reference clearly discloses using the carrier to effect degradation of toxic chemicals.

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Lipophilic powder carrier useful for degrading toxic chemicals is disclosed by Hince and Kristensen. Note Hince teaches slow release compositions for bioremediation (i.e. degradation of toxic chemicals), comprising powdered binders and microbial material, note page 13, column 2, lines 1 and 9; and Kristensen et al teach a lipophilic powder or binder made from beeswax, note column 6, line 34 and line 61. One of skill would have been motivated to select for a lipophilic powdered binder of beeswax since the same are disclosed by the cited prior art to be useful for degrading toxic chemicals. Thus, in reference to applicant's arguments against the references individually, it should be noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, Applicants' binder also is useful for fixing the microorganism too. In addition, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., role of the lipophilic powder includes adsorbing or absorbing the oils, such as gasoline, naphtha, kerosene, bunker C oil, or toxic chemicals, such as BTEX, and fixing the microorganism, and maximizing the efficiency of degrading the oils and toxic chemicals) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Also, the argument that the claimed lipophilic powder is not a nutrient for microorganisms is noted, however, the Romaine et al reference was not cited to teach that the lipophilic powder is a nutrient but to teach a mixture for fungi which includes soybean and saccharide, note column 9, lines 35 and 39, as nutrients and that waxes are disclosed to be present in the microbial material mixture, but not necessarily as a nutrient component per se but as a component for which to form a matrix. See column 9, lines 30-45 and abstract. The formation of a matrix clearly suggests that the wax can function as a binder. It is further noted that Applicants concede that soybean and/or saccharide may be used as nutrients for microorganisms is well known. In addition, the argument that there is no indication from the cited prior art means a "binder" for fixing microorganisms is noted, however, the function of fixing the microorganisms is an inherent feature of binders. Also one of skill would have at least expected successful results for the use of a binder as a carrier for fixing a microorganism.

With respect to the argument that the lipophilic powder is unrelated to properties of sustained release because it is inert to the microorganism and an insoluble material, it should be noted that Hince clearly discloses their composition to be in the form of granules and these would have been expected to be inert and insoluble material as well. Also the claims are not so limited to these properties and thus, the argument is not deemed persuasive. Therefore, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge



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which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Thus, the arguments that a *prima facie* case of obviousness does not exist are not deemed persuasive.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

All claims fail to be patentably distinguishable over the state of the art discussed above. Therefore, the claims are properly rejected.


No claims are allowed.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah K. Ware whose telephone number is 571-272-0924. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah K. Ware  
October 14, 2006

  
DAVID M. NAFF  
PRIMARY EXAMINER  
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